# The Triple Helix as a Highly Charged Intellectual Enterprise

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**Introduction**

*The THA's recent practice of out-sourcing conference management to external, as well as internal, groups has brought new resources, ideas and people into the Triple Helix orbit, but the downside may be a loss of focus. The recent London conference was broadly framed to include the unravelling of the Helix but the actual intended theme, announced in a "provocation piece" released just before the meet was "Open Innovation" (Andersen and Hutton, 2013). While an exploration of the contradictions between the Triple Helix (university-industry-government) and Open Innovation firm centred models could have been enlightening and productive, the encounter at the meet was mostly accidental and "off the cuff" albeit with notable exceptions such as a paper that directly treated the confrontation and confluence between the two models (Vanderslott, 2013).*

*Due to the late transition from hidden to open agenda, an intellectual opportunity was mostly missed. Apparently, prospective meeting bidders have the impression that they must at least appear to hew closely to a triple helix "party line" in order for their bid to succeed and thus only reveal their true intent later. If this is the case, it is counterproductive to the intent of the conference series and we may consider ways of broadening its intellectual reach. In the future we might encourage joint framing committees for bids together with representatives of alternative innovation perspectives, as well as joint meetings with sister societies, in order to encourage cross-fertilization and debate.*

*Although we have invited leading representatives of alternative perspectives, like Paul David at THV Torino, to keynote plenary sessions, a more thoroughgoing encounter among innovation models may be an exciting objective. The inaugural issue of the Triple Helix Journal, inviting representatives of diverse perspectives to consider Innovation's Future (See Call, p.x this issue) is one step in this direction. At the same time, following more than two decades of development, a systematic consideration of the development of Triple Helix may also be instructive.*

**Evolution of the Triple Helix**

The evolution of the Triple Helix concept has intensified over the last years through more regular meetings and events around the world. The conference has changed from a bi-annual meeting to an annual set of multiple meetings and workshops attracting academics, business practitioners and government officials. The concept and the metaphor of Triple Helix have gained an official recognition by international institutions such as the OECD and the European Commission, although not always with appropriate attribution. This utilization without citation indicates that Triple Helix is being "kleenexed," becoming as ubiquitous as the facial tissue that lost the right to protect its name.

This momentum has marked a transition from national innovation policy instruments, to supra-national programs that generate incentives to public and private service providers, firms and universities to engage in collaborative initiatives across borders. The nation-state as the locus of innovation policy and practice, or national system of innovation (NSI) model derived by Freeman (1988) from early post-war Japanese experience of "dual helix" government steering of industrial development and firm selection, subsequently became the leading global innovation policy concept. This instrument has itself devolved into regional, local and technological systems, indicating a broader variety of drivers and venues of innovation policy and

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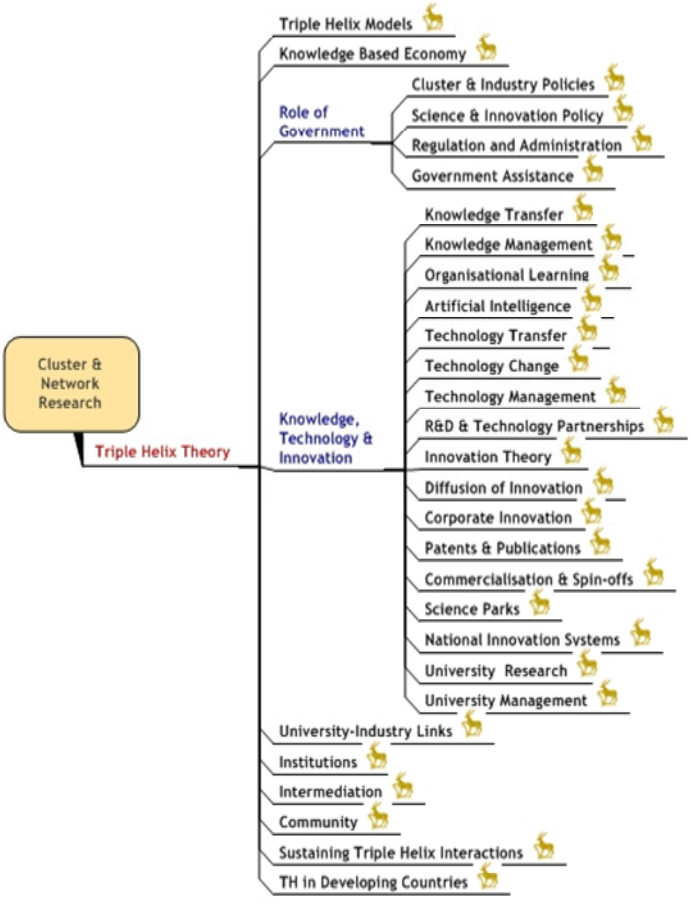
practice. Nevertheless, although expanded beyond its origins, the NSI concept remains rooted in the industrial societal context from which it was derived.

Triple Helix was extrapolated from an historical analysis of the emerging role of academic institutions in innovation. MIT's role in the transition of the Boston region from an industrial to a knowledge base, from the early 20th century, gained force and direction during the Great Depression through collaboration with governmental and business actors. An analysis of regional strengths and weaknesses by a proto triple helix regional organization sponsored by the 6 New England States resulted in the invention of the venture capital firm in the early post war to fill a seed-capital and mentoring gap in the innovation ecosystem of this region. The MIT case provided an exemplar (Etzkowitz, 1993, 2002) that was then theorised as a general innovation paradigm (Etzkowitz and Leydesdorff, 1995, 2000).

**Mapping the Triple Helix**

From the very beginning the TH community embraced both theory and practice – to grapple with the most complex representations of the so called A-B-G interactions, or the bi-lateral and multilateral engagement of Academia, Business and Government. An early reflection on the Triple helix theory depicted a number of scientific and applied fields (Fig. 1.) and initial bibliographies were assembled. The Cluster Reading Databank is among the first bibliographic resources that dedicate space to mapping the Triple Helix scientific field.

**Fig. 1. Bibliographic Representation of Triple Helix Theory**




Source: http://www.surrey.ac.uk/sbs/sar/centres/bcned/databank/index.htm (Todeva, 2011)

Triple Helix Theory comprises an eclectic body of scientific fields, analyzing complex socio-economic challenges in the search for Triple Helix solutions. Although the fundamental basis of the model is embedded in political economy, a variety of studies have brought forth a pleiad of multidisciplinary approaches to theorising about technological and institutional change, as well as government leadership and response to globalisation challenges, or building R&D capabilities within the public and the private sector.

Traditionally Triple Helix models have emphasised that the helices are complex spheres and trajectories of socio-economic activities undertaken in the so called *knowledge-based economies*. This label of the economy however, is misleading as every economy is knowledge-based – even when this is a traditional knowledge passed verbally from one generation to another. It is when the traditional knowledge gets acceleration and momentum through scientific and educational establishments, that it creates a sphere of its own to drive further circulation and dissemination of knowledge. *University research, university management, innovation theory* and the design and implementation of *national innovation systems* are all focused on the development of the 'knowledge sector' and the deployment of *innovation capabilities* in the economy. In addition to these fields of enquiry, the Triple Helix scholars have pursued topics such as k*nowledge management* and *organisational learning* to reflect on micro-scale innovation and creativity practices in the public and the private sector. Both public and private sector research is acknowledged to be at the forefront of economic development and the balance and complementarity between the two is seen as the critical component for robust innovation systems. The US is acknowledged as the leading technology engine in the world and more recently it is revealed a more critical picture that behind its success in addition to the market forces stands a steady flow of capital from Federal institutions for R&D in the Universities and in the defence industry and the health sector.

Further spin of the Helices is induced with theorising on *private sector R&D*, or *corporate innovation*, *patent protection, technology management, technology transfer, technology partnerships and collaborations*. Inevitably the public and the private sector R&D interact through employment of research staff, through *publications* and through *co-evolving scientific fields*, or through co-location in *science parks*, *commercialisation and spin-offs from University labs*. *University – Industry links* are acknowledged as *emergent entrepreneurial practices and strategies* on both sides.

Ultimately these interactions are led by *government science and innovation policies, cluster and industry policies, or general regulation, administration and financial assistance* of the university and the business sector. *The role of government* is also acknowledged as closely related with institutional and community development, aiming at producing sustainable trajectories of development, particularly for less-developed countries.

At its heart, the Triple Helix theorising has engaged a number of diverse theoretical domains, such as innovation and knowledge management theories, alliance and networks theories, or cluster development and public policy theories. The iterations between the helices represent a powerful metaphor for dynamic changes, framing and engagement across multiple actors and domains.

**Triple Helix XI**

The Triple Helix theory has also sparkled its critiques, or these authors that call for revisions of the model, in order to accommodate the notions of the society, the consumer, the public. Surely, engagement between Industry, University and Government cannot ignore the very essence of its purpose. These complex interactions are in the name of the society and the economic development of nations. The social dimension and the consumer are entangled right inside the Triple Helix, where they belong. This is exhibited well in Fig. 2, where inside the triangle is the Triple Helix conference itself, the organisers, the delegates, the sponsors, and all speakers that contributed to this intellectual enterprise with their papers, presentations, and ideas, or resources, labour, reputation and expectations.

Although the voice of the Triple Helix critiques can be heard now at any conference and international forum, the magic balance of the triangle stands strong. The latest Triple Helix conference in London (2013) exhibited the multiplication of the triangle. We were informed that we can re-invent the future only through *the knowledge triangle, spinning Research, Education and Innovation* (European Commission, and the European Society for Engineering Education, 2013).

The critical efforts to bring in more dimensions to the Triple Helix have found a comfortable home in *Stakeholder Mapping* and reporting *stakeholder engagement practices* across different sectors of the economy and different countries – from health care, to energy and sustainability. Among the *enablers* of Triple Helix Interactions researchers focused on *Institutions and Governance mechanisms*, on *Connectivity* and *Coordination*, *on Stakeholder engagement* and *Co-alignment of interests* between actors from different helices.

The surprise in tone of the conference in London was the stronger emphasis on the business sphere, and in particular, the impact of globalisation of markets and internationalisation of operations of firms and Universities. Many sessions were dedicated to the development of *business models at industry level* affecting restructuring of global industries and digital markets, or the design and implementation of *sustainable ecosystems* that are conducive to *open innovation*. Although there seems to be a consensus that restructuring of business models at industry level requires Triple Helix intervention, there is no consistent view on *whether the business sphere can lead in a Triple Helix platform*. On the contrary, statements were made by multinational corporations that their leadership in product and technology innovation requires up-front robust government policy platforms, and instruments, passing the leadership back to the Government.

The opening of the conference in London addressed also the Triple Crisis of *globalisation*, i.e. the financial crisis, the failure to protect the environment, and the widening gap of poverty around the world. This set up a critical tone for the discussions, and particularly presentations that reported on *Triple Helix Solutions* to these global challenges. The need for concerted efforts on a global scale suggests that it is time to look at the Triple Helix model as a ***Meta-Helix model of multi-lateral government intervention, supported by multi-disciplinary knowledge, and collaborative business participation around the world***.

Finally, the unspoken dimension in papers was identified as *the role of the market* and the impact of global competitive market forces on businesses, industries, the university sector, or the comparative advantage of nations. Although the dominant paradigm remains that the Triple Helix is led by Government policies even for large multinational firms such as GSK and EDF, the notion of the *market-driven Triple Helix* has emerged, and in particular through economics models of global industries, digital technologies application, or internet security.

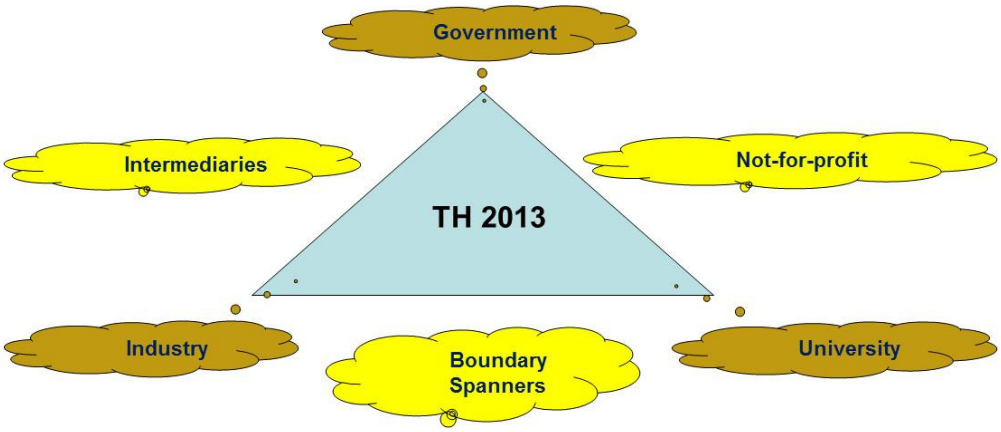
It was acknowledged also that the *revenue from commercialisation of innovation outputs* remains strictly within the industry, and firms are unwilling to share this value added from co-creation of ideas with the universities, or even with their consumers. The classical paradox *of protecting intellectual property vs. open source and open innovation* was reiterated, highlighting that the universities do not receive a fair share of their value added in *the knowledge co-creation process*.

Fresh ideas about the *drivers, enablers, processes and outcomes* from the *implementation of Triple Helix solutions* were shared and the audience was reminded of the notion *of public good,* as a major outcome of public funding. The tension and entanglement between the '*creative commons*' in open-source innovation and the constraints on residual claims to *intellectual property* are still waiting to be addressed by a new framework on *value co-creation*.

Many of the plenary sessions and interactive workshops drew attention to *the role of not-for-profit (NFP)* organisations, such as The Work-foundation, The Big Innovation Centre, The Innovation Hub – London TechCity, or The Triple Helix Association itself, along with its conferences and events. It became clear that

these NFP organisations are effectively and efficiently *driving Triple Helix interactions*, *being in charge of self-financed massive know-how exchanges* and *value co-creation* of ideas through *organising, coordinating and facilitating* (Fig. 2). This often is referred in the policy domain as enhancing the role of the Third Sector in driving economic growth, or employing NGOs *for transfer of knowledge and know-how to developing countries and regions*.

**Fig. 2. The Engagement of Powerful Actors to Drive Triple Helix Interactions**




Another surprise at the conference was the large number of delegates that sit on two or three Helices – the so called *Boundary Spanners*, translating ideas from one helix to another and participating in decision making, design and implementation of *Triple Helix policies*. Such presentations revealed how insightful experiences across the helices could be, but also the need for further research into critical evaluation of current *Triple Helix practices* and documentation of best examples.

Ultimately, *the role of intermediaries driving Triple Helix interactions* was iterated strongly with presentations on the need for venture capital injections into Triple Helix frameworks (*financial intermediaries*), or other *institutional* formations in particularly associated with the 'Smart Regions' EU programme that offer umbrella protection for Triple Helix interactions at micro, mezzo and macro levels. The potential conflict of interests for boundary spanning roles outlines a basic need for future research on *Intermediation, representation and leadership of Triple Helix scenarios*. It is clear that no social science can afford ignorance of the *ethical dimensions for intervention and resource allocation.*

Delegates attempted to focus on the provocative statement of 'mutating and unravelling Triple Helix transformations' and pointed at the need to maintain *conceptual clarity*, as well as to look below the surface of policy statements by looking at *the physical allocation of resources* for innovation and studying *the impact of such resource allocation on inequality and development*. Plenaries, workshops and paper sessions all confronted the fact that *Triple Helix solutions* are sought by *global industries*, as well as in *international comparative cases*, where knowledge of best-practice of Triple Helix Programs is contested in different country settings and *national innovation systems are compared and contrasted internationally*.

The audience at the London event embraced the challenges of *seeking Triple Helix Solutions for the Global Triple Crisis* (Finance, Development, Environment), and for *evaluating emerging and established Triple Helix Practices*. The Triple Helix community finally set a direction for the next annual conference of the Association in September, 2014 in Tomsk, Russia. **The Triple Helix as Nucleus of Innovation and Economic Growth: New Frontiers, Solutions and Challenges**

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